

Application No. 10/599,548
Response to Office Action dated September 12, 2008

Remarks

Applicants have received and carefully reviewed the Office Action mailed September 12, 2008. Claims 1, 3-4, 8-9 and 11-21 remain pending. Claims 1, 3-4, 8-9 and 11-18 and 21 have been amended, and claims 2, 5-7, and 10 have been canceled without prejudice. Support for the amendments and new claims can be found in the specification, claims, and drawings as originally filed. No new matter has been added. Reconsideration and allowance of all pending claims are respectfully requested.

Objection to Drawings

The drawings were objected to because the reference numerals were hand drawn. Submitted herewith are replacement drawings that address the Examiner's objections.

Claim Objections

Claim 11 was objected to because the phrase "making contact" was said to be unclear. Claim 11 has been amended to overcome the Examiner's objection.

Claim 13 was objected to because of an apparently missing subject of a phrase. Claim 13 has been amended to overcome the Examiner's objection.

Rejections under 35 U.S.C. § 103

Claims 1-10, and 12-21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Auer et al. (U.S. 4,118,750). After careful consideration of the rejection, Applicant must respectfully disagree. Turning first to claim 1, which recites:

1. (Currently Amended) A control circuit for relay-operated gas valves;
comprising:
~~with~~ a relay for opening and/or closing a gas valve; ~~and with~~
a failsafe circuit for the relay, the failsafe circuit including:
a charging circuit having at least one capacitor including a charging capacitor;

a drive circuit coupled to the relay having an input transistor, a base of the input transistor being electrically connected to the charging capacitor of the charging circuit; and
a control device being connectable to an input of the failsafe circuit, and the failsafe circuit only supplying the relay with a voltage and/or current necessary for opening the gas valve when an input signal having at least two different frequency signals succeeding each other in time is supplied at the input of the failsafe circuit by the control device;
wherein, upon the application of a first frequency signal at the input of the failsafe circuit, the charging circuit charges the charging capacitor, and upon the application of a second frequency signal at the input of the failsafe circuit, the second frequency signal having a different frequency than the first frequency signal, the charging circuit does not charge the charging capacitor, and the charging capacitor when sufficiently charged, provides a bias to the input transistor of the drive circuit that enable the input transistor of the drive circuit;
wherein the drive circuit, upon the application of the second frequency signal at the input of the failsafe circuit, supplies the relay with a voltage and/or current necessary for opening the gas valve but only if the charging capacitor is sufficiently charged by the first frequency signal to provide the necessary bias to the input transistor of the drive circuit to enable the input transistor of the drive circuit to pass the second frequency signal.

Auer et al. do not appear to teach, disclose or suggest many of the elements of claim 1. For example, Auer et al. do not appear to teach, disclose or suggest a failsafe circuit that includes a charging circuit having at least one capacitor including a charging capacitor, and a drive circuit coupled to a relay having an input transistor, with a base of the input transistor being electrically connected to the charging capacitor of the charging circuit. Nor do Auer et al. appear to teach, disclose or suggest: upon the application of a first frequency signal at the input of the failsafe circuit, the charging circuit charges the charging capacitor, and upon the application of a second frequency signal at the input of the failsafe circuit, the charging circuit does not charge the charging capacitor, and the charging capacitor when sufficiently charged, provides a bias to the input transistor of the drive circuit that enable the input transistor of the drive circuit. Nor do Auer et al. appear to teach, disclose or suggest: wherein the drive circuit, upon the application of the second frequency signal at the input of the failsafe circuit, supplies

the relay with a voltage and/or current necessary for opening the gas valve but only if the charging capacitor is sufficiently charged by the first frequency signal to provide the necessary bias to the input transistor of the drive circuit to enable the input transistor of the drive circuit to pass the second frequency signal. For these and other reasons, claim 1 is believed to be clearly patentable over Auer et al. For similar and other reasons, claims 3-4, 8-9, and 11-14, which depend from claim 1 and include significant additional distinguishing features, are also believed to be clearly patentable over Auer et al.

Turning now to independent claim 15, which recites:

15. (Currently Amended) A fail-safe circuit for controlling a relay that controls the opening of a gas valve, the fail-safe circuit comprising:
at least one input that can be connected to a gas valve controller;
at least one output that can be connected to the relay;
a charging circuit having a charging capacitor; and
a drive circuit having at least one transistor and a drive capacitor;
wherein the fail-safe circuit is configured to only supply an output signal to the relay to open the gas valve via the at least one output of the fail safe circuit if/when the gas valve controller provides an input signal having at least a first frequency signal and a ~~two~~ different second frequency signals to the at least one input of the fail-safe circuit;
wherein, during the period of the first frequency signal, the charging capacitor charges, and the drive capacitor discharges to provide a relay current to the relay; and
further wherein, during the period of the second frequency signal, the charging capacitor discharges into the base of the at least one transistor of the drive circuit, which causes the drive circuit to charge the drive capacitor and to provide a relay current to the relay.

Auer et al. do not appear to teach, disclose or suggest many of the elements of claim 15. For example, Auer et al. do not appear to teach, disclose or suggest a charging circuit having a charging capacitor and a drive circuit having at least one transistor and a drive capacitor, wherein the fail-safe circuit is configured to only supply an output signal to the relay to open the gas valve via the at least one output of the fail safe circuit if/when the gas valve controller provides an input signal having at least a first frequency signal and a different second frequency signal to the at least one input of the fail-safe circuit. Nor do Auer et al. appear to teach, disclose or

suggest that during the period of the first frequency signal, the charging capacitor charges, and the drive capacitor discharges to provide a relay current to the relay, and during the period of the second frequency signal, the charging capacitor discharges into the base of the at least one transistor of the drive circuit, which causes the drive circuit to charge the drive capacitor and to provide a relay current to the relay. For these and other reasons, claim 15 is believed to be clearly patentable over Auer et al. For similar and other reasons, claims 16-18, which depend from claim 15 and include significant additional distinguishing features, are also believed to be clearly patentable over Auer et al.

Turning now to claim 19. The Office Action states that “Auer discloses the apparatus necessary to complete the recited limitations, as discussed above...” Applicant contends that a *prima facie* case for rejection has not been established. Regardless of whatever apparatus is disclosed by the reference, Auer et al. do not appear to teach, disclose or suggest the specific method recited in claim 19. For example, Auer et al. do not appear to teach, disclose or suggest “closing the gas valve via the relay if the determining step determines that the gas valve controller is not currently providing a valid gas valve control signal.” Auer et al. relates to a railway signaling system, which would appear to have little to do with a method of controlling gas valves. That is, the railway signaling system of Auer et al. does not appear to relate in any way to “a method for controlling a relay that controls the opening of a gas valve”, and in particular, a method that includes the specific combination of method steps of: determining if a gas valve controller is currently providing a valid gas valve control signal; providing a signal to the relay in accordance with the gas valve control signal if the determining step determines that the gas valve controller is currently providing a valid gas valve control signal; and closing the gas valve via the relay if the determining step determines that the gas valve controller is not currently providing a valid gas valve control signal. If the Examiner elects to maintain this rejection, Applicant respectfully requests that the Examiner specifically point out where each and every method step of claim 19 can be found in Auer et al., as well as the basis for extending the railway signaling system of Auer et al. to the specific method recited in claim 19 (preferably with MPEP cites). For these and other reasons, claim 19 is believed to be clearly patentable

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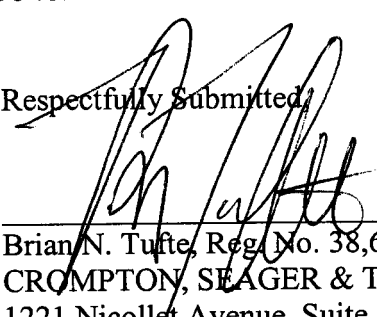
over Auer et al. For similar and other reasons, claims 20-21, which depend from claim 19 and include significant additional distinguishing features, are also believed to be clearly patentable over Auer et al.

Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Auer et al. in view of LaForest (U.S. 3,715,669). Applicant respectfully disagrees. As noted above, independent claim 1 is believed to be clearly patentable over Auer et al. LaForest does not appear to remedy the noted shortcomings of Auer as applied to claim 1. As such, claim 1 is believed to be clearly patentable over Auer et al. in view of LaForest. For similar and other reasons, claim 11, which depends from claim 11 and adds significant additional distinguishing features, is also believed to be clearly patentable over Auer et al. in view of LaForest.

It is submitted that, in light of the above remarks, all pending claims 1, 3-4, 8-9 and 11-21 are now in condition for allowance. Reconsideration and reexamination are respectfully requested. If a telephone interview would be of assistance, the Examiner is encouraged to contact the undersigned attorney at 612-359-9348.

Respectfully Submitted,

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